

capable of being operated by four consecutive dashes whose length may vary from 6.0 to 3.5 seconds and the intervening spaces vary between 1.5 seconds to 10 milliseconds. These types of auto alarms must not respond to dashes longer than 6.31 seconds or shorter than 3.33 seconds nor to intervening spaces longer than 1.58 seconds or shorter than 5 milliseconds except as follows:

(1) Non-digital types employing resistance-capacitance timing, approved before October 1, 1969, and placed in service on or before January 1, 1985, must not respond to dashes longer than 7.40 seconds or shorter than 2.80 seconds, nor to space intervals longer than 1.80 seconds or shorter than 5 milliseconds.

(2) Digital types employing a stable clock as the basic timing device, approved before May 1, 1968, and placed in service on or before December 1, 1975, may accept dashes whose lower limits extends down to 3.0 seconds.

(b) The auto alarm must operate with a signal of 100 microvolts RMS at 500 kHz applied to an artificial antenna consisting of a 20 microhenry inductance, a 500 picofarad capacitor, and a 5 ohm resistor connected in series in the absence of any interference and without manual adjustment. It must be capable of operation under these conditions on the following classes of emission:

- (1) A1B;
- (2) A2B with a carrier modulated at any modulation percentage from 30 through 100 percent with any modulation frequency from 300 through 1350 Hertz; and
- (3) H2B with a carrier keyed and emitted at any power level from 3 through 6 decibels below peak envelope power, with any modulation frequency from 300 through 1350 Hertz.

(c) The auto alarm must operate with signal levels up to 1 volt under normal operating conditions.

(d) The auto alarm warning device must not be activated by atmospherics or by any signal from the antenna other than the alarm signal.

(e) The auto alarms must respond to the alarm signal through non-continuous interference caused by atmospherics and powerful signals other than

the alarm signal. In the presence of atmospherics or interfering signals, the auto alarm must automatically adjust itself within a reasonable time to the condition in which it can most readily distinguish the alarm signal.

(f) The auto alarm must respond without adjustment and with practically uniform sensitivity to signals over a band extending no less than 4 kHz on each side of the 500 kHz radiotelegraph frequency and with a minimum attenuation of:

5 dB at 495.0 kHz and 505.0 kHz
40 dB at 487.0 kHz and 513.0 kHz
80 dB at 475.0 kHz and 525.0 kHz

(g) When the auto alarm is activated it must sound continuously a warning in the radiotelegraph operating room, in the radio operator's cabin, and on the bridge.

(h) The auto alarm must include a 500 kHz signal generator and a keying device which automatically disconnects the auto alarm from the antenna when an alarm signal of 100 microvolts is applied to test the auto alarm.

[51 FR 31213, Sept. 2, 1986, as amended at 63 FR 36606, July 7, 1998]

§ 80.261 Technical requirements for automatic-alarm-signal keying device.

(a) The automatic-alarm-signal keying device may consist of one or more units.

(b) The device must be designed to activate the keying circuits of any transmitter approved by the Commission for use as a main or reserve transmitter.

(c) Timing-adjustment controls must not be accessible from the exterior of the device.

(d) The device must be able to repeatedly transmit the alarm signal. For this purpose the dashes transmitted must have a duration of 3.8 to 4.2 seconds, and spaces between each of the twelve dashes constituting a series must have a duration of 0.8 to 1.2 seconds. Spaces between each series of twelve dashes must have a duration of 0.8 second to one minute. This operation must be sustainable with power supply voltage variations of $\pm 15\%$.

(e) A single control, protected to avoid accidental manipulation, must

be provided for placing the device into full operation within 30 seconds. Once in operation, the device must be capable of continuous operation without attention for a least one hour.

(f) When the "on-off" control of the device is placed in the "off" position, the keying circuit to the radio transmitter(s) must be automatically opened.

(g) The automatic-alarm-signal keying device must be capable of operation from a power supply independent of ship power. It may operate from the radio station emergency power supply.

(h) Instructions for adjustment of the device and the correct indication of any instrument incorporated to reveal improper operation must be inscribed on a plate mounted on the device in a position to be easily read by the operator.

(i) The keying circuit must be capable of switching 0.75 amperes DC through a 32 ohms non-inductive resistance. If the automatic-alarm-signal keying device is also intended to be used with transmitters requiring a keying circuit capability of 2 amperes DC through a 115 ohms non-inductive resistance, the keying circuit of the device must comply with this latter requirement.

(j) The automatic-alarm-signal keying device must operate within specifications throughout the temperature range 0-50 degrees Celsius at relative humidities as high as 95%.

(k) The automatic-alarm-signal keying device must be protected from excessive currents, power supply reversals and voltage variations which could cause damage to any component.

(l) The automatic-alarm-signal keying device must be capable of operating when subjected to vibrations having a frequency between 20 and 30 Hertz and an amplitude of 0.76 mm (0.03 inch) in a direction at an angle of 30 to 45 degrees with the base of the automatic-alarm-signal keying device.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44952, Aug. 25, 1993]

§ 80.263 Common requirements for survival craft radio equipment.

In addition to the requirements set forth in §§80.265 and 80.267, survival

craft radio equipment must comply with the following:

(a) The radio equipment must be operable without tools.

(b) Each equipment must be provided with an instruction manual covering the design, installation, operation, and maintenance of the equipment.

(c) Simple instructions for the operation of the equipment must be prominently and permanently attached to it. These instructions must include information about the erection of the antenna(s), and automatic and manual transmission of the international distress and alarm signals on 500 kHz.

(d) An artificial antenna for test purposes must be provided.

(e) The survival craft radio transmitter must meet the following:

(1) Must be pretuned to the required frequencies. The operating frequencies must be maintained within the prescribed tolerances under varying voltages, antenna circuit characteristics, and other normal conditions of adjustment, and shock or vibration. The frequency control circuit adjustments must not be readily available to the person using the transmitter;

(2) Antenna tuning controls must be provided on the operating panel. An initial adjustment of these controls must resonate the antenna circuit at each required operating radio frequency. Resonance must be maintained without further adjustment of the controls during a normal operating period of the transmitter;

(3) The front panel must contain controls for manual operation on 500 kHz, manual operation on 8364 kHz, and automatic operation alternately on these two frequencies. Not more than one manual switch adjustment must be necessary to transmit automatically. For manual radiotelegraphy the transmitter and receiver, including their controls, must be arranged so that they can be operated from the same operating position and the time necessary to change from transmission to reception and vice versa must not exceed two seconds; and

(4) In automatic operation the radio must:

(i) On 500 kHz transmit the international radiotelegraph alarm signal